Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method of performing PCR and separating one or more PCR products, the method comprising:
   (i) mixing one or more PCR reaction components with a sieving medium to provide a PCR sieving medium, wherein the sieving medium has a polymer concentration, and wherein said polymer concentration of the sieving medium ~~comprises a polymer solution, which polymer solution comprises~~ is less than about 0.4% ~~polymer~~; and
   (ii) thermocycling the PCR sieving medium to produce one or more PCR products; and,
   (iii) separating the one or more PCR products by flowing the one or more PCR products through the sieving medium.

2. (canceled)

3. (currently amended) The method of claim 1, wherein the polymer ~~solution comprises~~ concentration of the sieving medium is about 0.35% ~~polymer~~ or less.

4. (currently amended) The method of claim 1, wherein the polymer ~~solution~~ comprises acrylamide.

5. (original) The method of claim 4, wherein the acrylamide comprises linear acrylamide, polyacrylamide, polydimethylacrylamide, or polydimethylacrylamide/coacrylic acid.

6. (currently amended) The method of claim 1, wherein the polymer ~~solution~~ comprises agarose, methyl cellulose, polyethylene oxide, hydroxycellulose, or hydroxy ethyl cellulose.

7. (original) The method of claim 1, wherein the one or more PCR reaction components comprise one or more of: a thermostable DNA polymerase, a plurality of nucleotides, a nucleic acid template, a primer which hybridizes to the nucleic acid template, or Mg^{++}.

9. (original) The method of claim **8**, further comprising separating the one or more PCR products by flowing the one or more PCR products through the sieving medium in the microfluidic channel.

10. (original) The method of claim **9**, wherein separating comprises electrophoretically separating.